

Bladder diverticula

Epithelial lined pouch arising from a hollow viscus

Bladder diverticula represent herniations of bladder mucosa through muscularis propria – therefore only three layers, mucosa, lamina propria, adventitia

Common

Congenital or acquired

Congenital

- Solitary

- Almost exclusively boys vs. girls

- Typically < 10 years old

- Usually lateral and posterior to ureteric orifice – thought to be due to weakness in bladder wall – may be bilateral

- Large diverticula at dome a/w prune belly syndrome. Also more common in Ehlers-Danlos syndrome

- No association with bladder outflow obstruction

Acquired

- Usually a/w BOO or neurogenic LUTD

- Typically multiple

- Variable location within bladder although most common at uterovesical hiatus

- Usually a/w trabeculation and sacculation

- NB. Hutch diverticulum contains UO in base

Presentation

- Typically asymptomatic**

- UTI

- Incomplete emptying

- Haematuria

- Abdominal pain

- Palpable mass

- Malignant transformation

 - Natural history unknown

 - Surveillance generally recommended

 - Usually TCC in 70-80% cases; SCC for remainder

 - Theoretical risk of early metastasis in diverticula – MRI recommended in all patients for local staging

Imaging

- USS

- Cystoscopy

- Voiding cystography

 - Very high rate of reflux (> 90%) seen in association with *congenital* bladder diverticula

- CT/MRI

- Urodynamics

 - Define contribution of BOO

- Upper tract

 - Medial deviation of ureters most common

 - Excludes hydroureteronephrosis

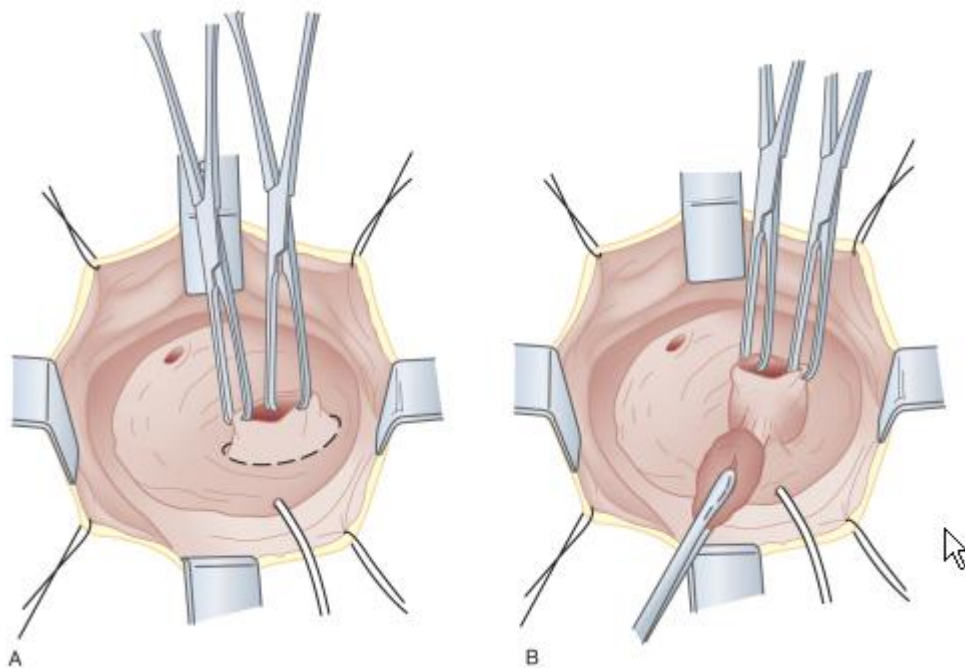
Management

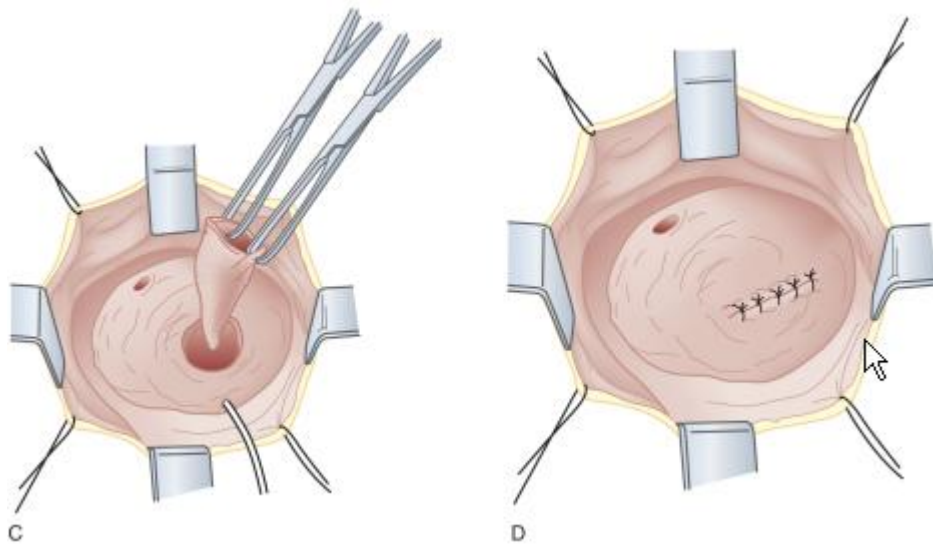
General rationale:

- Exclude malignancy
- Exclude upper tract dilatation
- Identify and treat bladder outflow obstruction
- Survey diverticulum in asymptomatic population*
 - Cystoscopic surveillance
 - CISC for compliant individuals
- Consider diverticulectomy for symptoms* (either at same time of after BOO surgery)
 - Storage symptoms
 - Recurrent UTIs
 - Obstruction
 - Stones
 - ? Ipsilateral VUR

Surgical intervention

- Endoscopic incision
 - Unfit patients
 - Incision/resection of diverticular neck
 - Converts tight-neck to broad-neck
 - Can precipitate acute urinary retention
- Transvesical diverticulectomy
 - Hugh Hampton Young 1906
 - Anterior cystotomy
 - Provided no adhesions, entire diverticulum can be everted into bladder and excised
 - 2 layer closure bladder wall
 - Care must be taken to avoid ureter





Laparoscopic/open diverticulectomy
Combined intravesical/extravesical approach for large or
tethered diverticula